SYMPHYTA (HYMENOPTERA) OF SRI LANKA

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Abstract.—Seven species of Symphyta in three families, Tenthredinidae, Xiphydriidae, and Orussidae, are known from Sri Lanka. One new species, Nesoselandria minuta, is described. Senoclia bilanga Rohwer is a new synonym of Anisoarthra coerulea Cameron; Netrocerus nigriceps Enderlein is a new synonym of Eusunoxa ceylonica Malaise; Nesoselandria ceylonensis Rohwer is a new synonym of Nesoselandria thwaitesii (Kirby), new combination; and Eusunoxa nigriceps (Rohwer) is a new combination. Keys to families and genera and to species of Nesoselandria are provided.

The sawfly fauna of Sri Lanka has never been reviewed, only descriptions of species are scattered in the literature. Nine species have been described, but because of new synonymy and the possibility that one species, *Anisoarthra cyanella* Cameron, may not occur on the island, seven species in three families (Tenthredinidae, Xiphydriidae, and Orussidae) are actually known.

The data presented here are based on specimens collected during the Smithsonian Ceylonese Insect Project (SC), on a study of the types of species described from Sri Lanka, and on specimens from Sri Lankan collections at the University of Lund, Lund, Sweden (LUND), and the Naturhistorisches Museum Basel, Switzerland (NHMB). During the Smithsonian Ceylonese Insect Project, five species of Tenthredinidae were collected, but the representatives of Orussidae and Xiphyriidae recorded from Sri Lanka were not found. Two species, *Anisoarthra coerulea* Cameron and *Mocsarya metallica* Mocsáry, are also found outside of Sri Lanka; the former occurring in southern India, which has a similar sawfly fauna. Hosts are not known for the species treated here.

KEY TO FAMILIES AND GENERA

1. Antennae inserted on ventral aspect of head, below lower margin of eyes and below clypeus; hindwing without closed cells Orussidae

Family Tenthredinidae Subfamily Blennocampinae Anisoarthra coerulea Cameron Figs. 1, 9, 13

Anisoarthra coerulea Cameron, 1876: 462 (♀, ♂, "Ceylon"; lectotype ♀, by present designation, in British Museum (Natural History), labeled "Type, H.T.," "B.M. Type Hym. 1.363," "B.M. Type, Hym. Anisoarthra coerulea (Cameron, 1876)," "Ceylon," "Kby. p. 8, f. 21"; other specimens were not found).

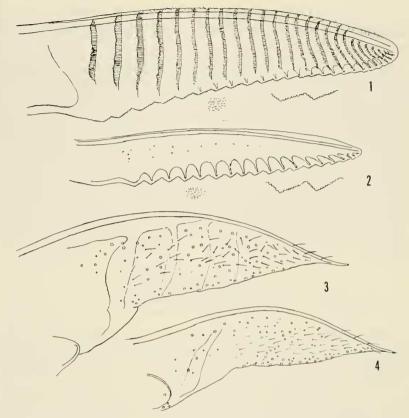
Senoclia bilanga Rohwer, 1921: 106 (♀, ♂, "Kollegal, 2,000 feet (about 606 meters), Coimbatore, S. India"; holotype ♀ in USNM, examined). New synonymy.

Remarks.—Anisoarthra coerulea is large, 9–11 mm long, and is entirely purplish black, commonly with a purplish iridescent tinge. The tarsal claws are comblike, having 4–5 teeth plus a short basal lobe (Fig. 13). The female ovipositor and male genitalia are as in Figs. 1, 9.

Malaise (1937) treated *bilanga* Rohwer from southern India as a variety of *coerulea*; however, since I did not find differences between them, I believe that they are the same. Four or five other species of *Anisoarthra* are known from Southeast Asia.

In Sri Lanka, this species has been collected in the wet zone, rain forest hill country, with an annual rainfall of 1952 mm as well as in drier zones where the annual rainfall is 1500 mm.

Records.—SRI LANKA: North Central Province: Anuradhapura District, Padaviya, 2–8-XI-1970, O. S. Flint, Jr. (1 9; SC). North Western



Figs. 1-4. Female lancets. 1, Anisoarthra coerulea. 2, Eusunoxa ceylonica. 3, Nesoselandria anthracina. 4, N. thwaitesii. Figs. 3 and 4 drawn to same scale, but not same scale as Figs. 1, 2.

Province: Puttalam District, Tabbowa, 17-X-1973, black light, sea level, M. and B. Robinson (1 &; SC). Central Province: Kandy District, Udawattakele, 1–3-X-1973, K. V. Krombein, P. B. Karunaratne, P. Fernando (1 &; SC); Kandy District, Udawattakele, 27–28-X-1972, P. B. Karunaratne (1 \$\varphi\$; SC); Kandy District, Waharawata, 1-IX-1975, D. M. Davies, S. Karunaratne, D. W. Balasooriya (1 &; SC); Kandy District, Kandy, X-07, 9-07, X-09, XI-06, IX-1911, 10-03 (series; USNM); Kandy District, Kandy, 30-IX-1953, F. Keiser (1 &; NHMB); Kandy District, Kandy, Roseneath, 29-IX-53, F. Keiser (1 \$\varphi\$; NHMB); Kandy District, Kandy, Deiyannewela, 17-X-53, F. Keiser (3 \$\varphi\$, 2 &; NHMB); Dambulla, 21-XI-53, F. Keiser (3 \$\varphi\$; NHMB); Matele District, Nalanda, X-07 (1 \$\varphi\$; USNM). INDIA: Karnataka: Kollegal, 2000 ft., Coimbatore, 1-IX-17 (type-series; USNM). Tamil Nadu: Nilgiri Hills, Kallar, 1250 ft., X-1955 (1 \$\varphi\$; USNM).

Anisoarthra cyanella Cameron

Anisoarthra cyanella Cameron, 1876: 462 (♀, ♂, "Ceylon"; types not found).

Remarks.—The types should be in the British Museum, but because they cannot be found (J. Quinlan, personal correspondence) the status of cyanella is uncertain. Kirby (1882) synonymized cyanella under Senoclia purpurata Smith (currently in the genus Senoclidea) and gave the distribution as "Celebes; New Guinea" but did not mention Ceylon. The type-locality given by Cameron may be an error. I have not seen specimens from Sri Lanka that agree with the description of cyanella and have not seen specimens of purpurata from Sri Lanka. This species, if it is the same as purpurata as Kirby indicated, can be distinguished from coerulea by the tarsal claws, which have two teeth and a basal lobe, by the antenna which is "shorter, more thickened towards the apex," and by the whitish apex of the foretarsus; otherwise, the size and coloration are similar in the two species.

Subfamily Allantinae Eusunoxa ceylonica Malaise Figs. 2, 8, 14

Netrocerus nigriceps Enderlein, 1920: 371 (\$\varphi\$, "Ceylon"; type in Polish Academy of Sciences, Warsaw, examined). New synonymy. Preoccupied in Eusunoxa by Eusunoxa nigriceps (Rohwer), new combination (described in genus Beleses, 1915).

Remarks.—*Eusunoxa ceylonica* was one of the most commonly collected sawflies in Sri Lanka and may be distinguished as follows: Orange color with antenna, head, apex of tibia and tarsus of fore- and midlegs, and most of femur, tibia, and tarsus of hindleg black; uniformly blackish infuscated wings, sometimes blackish abdominal apex in male; two teeth of the tarsal claws (Fig. 14); and anal cell of forewing with an anal crossvein (Fig. 11). The female ovipositor and male genitalia are as in Figs. 2, 8.

Other species of *Eusunoxa* are found in southeastern Asia. *Eusunoxa* nigriceps (Rohwer), described from southern India, is entirely black, but it and others are separated from ceylonica primarily by differences in the genitalia.

Eusunoxa ceylonica occurs in both open and wooded areas in both dry and wet zones with annual rainfall ranging from 660 to 1952 mm.

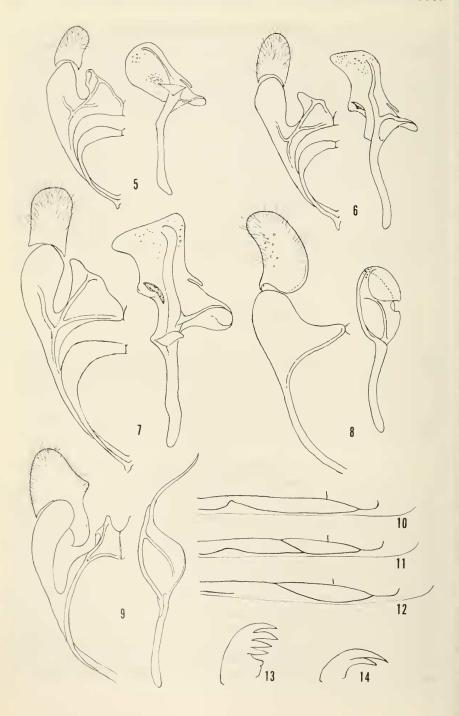
Records.—SRI LANKA: Western Province: Colombo District, Colombo,

50 ft. elev., Museum gardens, 15-I-1977, K. V. Krombein, P. Fernando, D. W. Balasooriya, V. Gunawardane (1 ♀; SC); Colombo, Museum gardens, 50 ft., 18-III-1977, P. B. Karunaratne (1 &; SC); Colombo, collected in Museum gardens, 22-VI-1977 (10 ♂; SC), 14-VI-1977 (1 ♀, 1 ♂; SC), T. Wijesinhe; Colombo District, Labugama Reservoir, 16-II-1975, K. V. Krombein, P. B. Karunaratne, P. Fernando, S. Karunaratne (1 9; SC); Colombo District, Labugama, Reservoir Jungle, 2-4-II-1977, K. V. Krombein, P. B. Karunaratne, D. W. Balasooriya, V. Gunawardane (1 9; SC); Colombo District, Ratmalana Airport, Ratmalana, 13-I-1977, K. V. Krombein, P. Fernando, D. W. Balasooriya, V. Gunawardane (1 &; SC); Colombo District, Kalatuwawa, Malaise trap, 7-8-VIII-1975, Y.-M. Huang, E. L. Peyton, S. Karunaratne, D. W. Balasooriya (1 ♀; SC); Yakkala, 18 mls NE Colombo, 13-31-I-1962, Loc. 11, swept on veg. at ditches in paddy fields, Lund University Ceylon Expedition 1962, Brinck-Andersson-Cederholm (1 9; LUND). Central Province: Kandy District, Peradeniya Botanical Gardens, I-1971, Piyadasa and Somapala (1 ♀; SC). Southern Province: Hambantota District, Palatupana Tank, 15-20 ft., 18-20 Jan, 1979, Malaise trap, K. V. Krombein, P. B. Karunaratne, T. Wijesinhe, S. Siriwardane, T. Gunawardane (1 ♀, 1 ♂; SC). Eastern Province: Amparai District, Ekgal Aru Sanctuary Jungle, 9-11 March 1979, K. V. Krombein, T. Wijesinhe, Y. L. Jayawickrema, S. Sirwardane (2 &; SC), same data, Malaise trap added after date (1 &: SC). North Western Province: Rajakadaluwa, 23-VIII-1953. F. Keiser (2 &; NHMB). Northern Province: small stream, 2 mls E Mankulam, 14-11-1962, Loc. 75, grassy ground, Lund University Ceylon Expedition 1962, Brinck-Andersson-Cederholm (1 &; LUND).

For Loc. 11 and 75 from Lund University specimens, see Brinck et al., 1971.

Subfamily Selandriinae Genus Nesoselandria Rohwer

Nesoselandria is a large genus in Asia. Most species are small, 3–6 mm long, and mostly black. Few good external characters are evident for separating species, and the small, fragile female lancet is very similar throughout the genus. The best characters for species separation seem to be in the male genitalia where good differences were found in the Sri Lankan specimens. Malaise (1944) gave a key to species of Nesoselandria, but many described species were omitted, and only one species, anthracina, was recorded from Sri Lanka. Malaise also proposed two subgenera, the typical subgenus and Corrugia. These subgenera were separated by the sculpturation of the head, Corrugia having a transverse furrow and a number of transverse carinae between the eyes on the frons and Nesoselandria lacking these. All of the species I have seen from Sri Lanka would belong in the



subgenus *Corrugia*. *Nesoselandria* is also found in southern India, but all of the specimens I examined from southern India belong in the typical subgenus.

KEY TO SPECIES

- Distance between hindocelli less than 2× diameter of an ocellus;
 male genitalia as in Fig. 5 minuta, new species

Nesoselandria anthracina Malaise Figs. 3, 7

Nesoselandria anthracina Malaise, 1944: 14 (&, "Ceylon (Ohiya)"; holotype in Swedish Museum of Natural History, Stockholm, examined).

Remarks.—The entirely black coloration, slightly larger size than other species, and genitalia as illustrated are adequate for identifying *anthracina*.

This species is clearly endemic, being restricted to the wet zone of the Central Highlands at altitudes of over 1700 m. The annual rainfall at Nuwara Eliya is 2162 mm.

Records.—SRI LANKA: *Central Province:* Nuwara Eliya District, Hakgala, 6000 ft., 2-VI-1976, K. V. Krombein, S. Karunaratne, D. W. Balasooriya (1 \(\phi\), 2 \(\phi\); SC); Nuwara Eliya District, Kanda-ela Reservoir, 6200′, 1–5-X-1970, O. S. Flint, Jr. (1 \(\phi\); SC); Nuwara Eliya District, Kanda-ela, 2-VI-1975, S. L. Wood and J. L. Petty (5 \(\phi\); SC); Nuwara Eliya District, Kanda-ela Reservoir, 5.6 mi SW Nuwara Eliya, 6200 ft., 10–21-II-1970, Davis and Rowe (2 \(\phi\), 2 \(\phi\); SC); Nuwara Eliya District, Mt. Pidurutalagala, 6500–7500 ft., 8-X-1976, G. F. Hevel, R. E. Dietz IV, S. Karunaratne, D. W. Balasooriya (1 \(\phi\); SC); Nuwara Eliya District, Galway Nat. Reserve, Nuwara Eliya, 6200 ft., 10 June 1978, K. V. Krombein, P. B. Karunaratne,

Figs. 5–9. Male genitalia; left, capsule, ventral aspect of left half; right, valve, lateral aspect with ventral side to left. 5, Nesoselandria minuta. 6, N. thwaitesii. 7, N. anthracina. 8, Eusunoxa ceylonica. 9, Anisoarthra coerulea. Figs. 10–12, Anal cell of forewing. 10, Nesoselandria. 11, Eusunoxa. 12, Anisoarthra. Figs. 13–14. Tarsal claws, 13, A. coerulea. 14, E. ceylonica.

T. Wijesinhe, L. Jayawickrema (16 $\,^{\circ}$, 2 $\,^{\circ}$ SC); Nuwara Eliya District, Nuwara Eliya, Galway Nat. Res., 1790–1990 m, 22–23-X-1977, K. V. Krombein, T. Wijesinhe, M. Jayaweera, P. A. Panawatta (1 $\,^{\circ}$; SC); Pidrutalagala, 2000–2460 m, 19-XI-1953, F. Keiser (1 $\,^{\circ}$, 3 $\,^{\circ}$; NHMB); Hakgala, 1800–1900 m, 31-V-1953, F. Keiser (1 $\,^{\circ}$; NHMB). *Province of Uva:* Badulla District, Ohiya (type and paratype).

Nesoselandria thwaitesii (Kirby), new combination Figs. 4, 6

Aneugmenus thwaitesii Kirby, 1883: 203 (&, "Ceylon"; type in British Museum (Natural History), examined).

Nesoselandria ceylonensis Rohwer, 1912: 234 (♀, "Peradeniya, Ceylon"; type in USNM, examined). New synonymy.

Remarks.—This species has partly white tarsi, sometimes whitish only on the basitarsi, as does *minuta*, and is 4–5 mm long. Male genitalia should be used to separate *thwaitesii* from *minuta*, although the ocellar triangle seems to be a good character for separating males of the two species. The hindocelli in *thwaitesii* are nearly three ocellus diameters apart, forming a low triangle, whereas in *minuta* the hindocelli are less than two ocellus diameters apart, producing a higher triangle. The value of the ocellar triangle for separation of females of these two species is unknown since only the female of *thwaitesii* is available for study. The types of *thwaitesii* and *ceylonensis* proved to be opposite sexes of the same species. Kirby (1883) stated that *thwaitesii* had 10-segmented antennae, but antennae of the type are actually 9-segmented. The type of *thwaitesii* is a male; this was not stated in the original description. Malaise (1944) indicated that *thwaitesii* belonged in *Nesoselandria*, but he was not certain.

Nesoselandria thwaitesii is also a wet zone species, but it occurs at lower altitudes than does anthracina. The average annual rainfall for collection sites is 2400–2700 mm.

Records.—SRI LANKA: *Central Province*: Kandy District, Udawattakele Sanctuary, 26–30-VII-1978, Malaise trap, K. V. Krombein, T. Wijesinhe, V. Kulasekare, L. Jayawickrema (2 ♀; SC); Udawattakele, Kandy, 510–580 m, 8–10-IX-1977, K. V. Krombein, P. B. Karunaratne, T. Wijesinhe, M. Jayaweera (1 ♀; SC); Kandy District, Peradeniya (type of *ceylonensis*); Kandy, 29-X-1953, F. Keiser (1 ♂), 30-IX-53 (1 ♂), 15-X-53 (1 ♀), 15-X1-53 (1 ♀) (NHMB). *Western Province*: Colombo District, Labugama Reservoir, 400 ft., 1-XII-1976, G. F. Hevel, R. E. Dietz IV, P. B. and S. Karunaratne, D. W. Balasooriya (1 ♀; SC); Kalutara District, Agalawatta, black light, 13–14-X-1976, G. F. Hevel R.E. Dietz IV, S. Karunaratne, D. W. Balasooriya (3 ♀, 1 ♂; SC). *Province of Sabaragamuwa*: Kegalla District, Kitulgala, Bandarakele Jungle, 17–18 March 1979, K. V.

Krombein, P. B. Karunaratne, T. Wijesinhe, L. Jayawickrema, T. Gunawardane (1 ♀; SC); Ratnapura District, Rakwana, 1500′, 20-X-1970, O. S. Flint, Jr. (1 ♂; SC); Ratnapura District, Ratnapura, Pompekele, 10-X-1980, P. B. Karunaratne, T. Wijesinhe, L. Jayawickrema, V. Gunawardane (1 ♀; SC). *Province of Uva:* Lunugala, 25-X-1953, F. Keiser (♀; NHMB).

Nesoselandria minuta Smith, new species Fig. 5

Female.—Unknown.

Male.—Length, 3.7 mm. Black with tarsi whitish, apical 2 or 3 segments of each tarsus infuscated blackish. Wings lightly, uniformly infuscated black; veins and stigma black. Third antennal segment $1\frac{1}{4}\times$ length of 4th segment. Head with transverse carinae on frons between eyes; clypeus truncate; malar space linear; postocellar area nearly $5\times$ broader than long; distance between hindocelli less than $2\times$ diameter of an ocellus and ocellar triangle high, nearly equilateral. Genitalia as in Fig. 5.

Holotype.—&, Province of Sabaragamuwa, Ratnapura District, labeled "Ceylon, Rat. Dist., Uggalkaltota, 350 ft., Irrigation Bungalow, 31 Jan.—8 Feb. 1970, Davis and Rowe." USNM type no. 76875.

Paratype.—Central Province, Kandy District, Thawalamtenne, 2200 ft., 7–8-IX-1980, K. V. Krombein, P. B. Karunaratne, T. Wijesinhe, L. Jayawickrema, V. Gunawardane (1 3).

Remarks.—The genitalia of *minuta* are very different from those of the other two species from Sri Lanka, and the specimens do not agree with the other species treated by Malaise in his key (1944). The distance between the hindocelli may be used to separate *minuta* from the males of *thwaitesii*, as given in the key and discussed under *thwaitesii*, but the two species are best separated by comparing Figs. 5–7 of the genitalia. As with the other species of *Nesoselandria*, this is apparently also a wet zone species.

Family Xiphydriidae Cingalixiphia striatifrons (Cameron)

Xiphydria striatifrons Cameron, 1905: 70, pl. A, fig. 1 (♀, "Pundalu-oya"; type in British Museum (Natural History), examined).

Remarks.—This is the only species of Xiphydriidae known from Sri Lanka. I have not seen specimens other than the type. The type-locality is in Central Province, Nuwara Eliya District.

Family Orussidae Mocsarya metallica (Mocsáry)

Oryssus metallicus Mocsáry, 1896: 1 (♀, "Sumbawa in Insulis Sundaicis"; type probably in the Hungarian Museum of Natural History, Budapest).

Remarks.—I have not seen specimens of Orussidae from Sri Lanka. *Mocsarya metallica* was described from Indonesia, but it was recorded from Sri Lanka by Bingham (1908) and later by Benson (1935). Bingham stated that his specimen from Sri Lanka corresponded closely with Mocsáry's description of *metallica*, but he noted several differences in the amount of infuscation of the forewings and the coloration of the legs. There is no doubt that an orussid does occur in Sri Lanka, but a comparison of Bingham's specimen with the type of *metallica* will be necessary to determine if Bingham's specimen is actually that species.

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Note

Authorship of the Family Name Erotylidae (Coleoptera)

Boyle (1956. Bull. Am. Mus. Nat. Hist. 110) in his monograph of the Erotylidae of North America cited Lacordaire (1842. Monographie des Erotyliens) as the author of the family group name Erotylidae. Sen Gupta (1969. Proc. Zool. Soc. Calcutta 22) cited Guérin-Méneville based on the usage in 1841 (Rev. Zool. 1841).

The earliest usage of a family group name for Erotylidae 1 have seen, however, is by Leach in the Entomology Section of Brewster's *Edinburgh Encyclopaedia* published in 1815. He used the heading "Tribe X. Erotylides," and beneath it "Family I. Erotylida." His usage of the vernacular and subsequent latinization and acceptance by later authors is consistent with Article 11e, *International Code of Zoological Nomenclature*. The name Erotylidae should therefore be credited to Leach, 1815.

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